

Listing of Claims:

This listing of claims reflects all claim amendments and replaces all prior versions, and listings, of claims in the application. Material to be inserted is in **bold and underline**, and material to be deleted is in ~~strikeout~~ or (if the deletion is of five or fewer consecutive characters or would be difficult to see) in double brackets []].

1. (Previously Presented) A needle-free jet injection device for delivering a fluid into an internal organ, the device comprising:

a rigid end effector having a blunt distal end and a longitudinal axis configured into a shape and including a plurality of orifices, the end effector including a rigid interior wall that defines a rigid fluid channel, where the end effector is sufficiently rigid to maintain the shape of its longitudinal axis during use, where the fluid channel has a cross section through which a central axis of the end effector extends, and where the end effector is configured to enable fluid to flow from the fluid channel out through the plurality of orifices;

a fluid reservoir in fluid communication with the end effector; and

an ejection mechanism adapted to eject the fluid from the fluid reservoir through the end effector and out of the orifices with sufficient pressure to penetrate an outer surface of the organ while preserving functionality of the organ and without penetration of the outer surface of the organ by the end effector, where the end effector extends away from the ejection mechanism such that an operative end of the end effector is spaced from the ejection mechanism.

2. (Original) The device of claim 1, wherein the end effector includes a straight shaft section and a distal section.

3. (Original) The device of claim 2, wherein at least some of the orifices are located in the distal section.

4. (Original) The device of claim 3, wherein all of the orifices are located in the distal section.

5. (Original) The device of claim 1, wherein the ejection mechanism is further adapted to allow the device to eject multiple doses of fluid without refilling the fluid reservoir.

6. (Original) The device of claim 1, wherein the pressure with which the fluid is ejected through the orifice is sufficient to cause a transmural lesion in the organ.

7. (Original) The device of claim 6, wherein the organ is a heart.

8. (Original) The device of claim 7, wherein the fluid includes ethanol.

9. (Original) The device of claim 6, wherein the transmural lesion is sufficient to prevent electrical signals from traveling through the transmural lesion.

10. (Original) The device of claim 1, wherein length of the end effector is between four and ten inches.

11. (Original) The device of claim 1, wherein the outer diameter of the end effector is between 0.100 and 0.300 inches.

12. (Original) The device of claim 1, wherein the inner diameter of the end effector is between 0.050 and 0.275 inches.

13. (Original) The device of claim 2, wherein the length of the distal section is between 0.50 and 2.00 inches.

14. (Original) The device of claim 2, wherein the distal section lies at an angle between 30 and 90 degrees relative to the shaft.

15. (Original) The device of claim 2, wherein the distal section lies at a 45 degrees angle relative to the shaft.

16. (Original) The device of claim 1, wherein at least some of the orifices are arranged linearly along the length of the end effector.

17. (Original) The device of claim 1 wherein the orifices are arranged in multiple rows along the length of the end effector.

18. (Original) The device of claim 1 wherein the rows are offset from each other.

19. (Previously Presented) An end effector for a needle-free injection device adapted to inject a fluid through an outer surface of an internal organ and into the internal organ, without penetration of the outer surface of the internal organ by the end effector and while maintaining functionality of the organ, the end effector comprising a longitudinally rigid elongate shaft that extends away from the injection device to a blunt distal end and that includes a tubular fluid channel fluidly and directly coupled with a plurality of orifices through which the fluid may be ejected, wherein the elongate shaft is sufficiently rigid to maintain a longitudinal shape during use, where the tubular fluid channel has a cross section through which a central axis of the end effector extends, and where the tubular fluid channel includes a rigid portion extending substantially all the way between the injection device and the plurality of orifices.

20. (Original) The device of claim 19, wherein the end effector includes a straight section and a distal section.

21. (Original) The device of claim 19, wherein the orifices are arranged linearly along the length of the end effector.

22. (Original) The device of claim 21, wherein at least some of the orifices are located in the distal section.

23. (Original) The device of claim 22, wherein all of the orifices are located in the distal section.

24. (Previously Presented) The device of claim 20, wherein the distal section is angled relative to the straight section.

25. (Previously Presented) The device of claim 20, wherein the distal section is curved.

26–32. (Cancelled).

33. (Previously Presented) The device of claim 1, wherein the fluid channel is cylindrical.

34. (Cancelled)

35. (Previously Presented) The device of claim 1, wherein at least some of the orifices are oriented in a direction generally lateral to the central axis of the end effector.

36. (Previously Presented) The device of claim 35, wherein all of the orifices are oriented in a direction generally lateral to the central axis of the end effector.

37. (Previously Presented) The device of claim 6, wherein the pressure with which the fluid is ejected through the orifice is less than about 4000 psig.

38. (Previously Presented) The device of claim 37, wherein the pressure with which the fluid is ejected through the orifice is less than about 2100 psig.

39. (Previously Presented) The device of claim 38, wherein the pressure with which the fluid is ejected through the orifice is less than about 1100 psig.

40. (Previously Presented) The device of claim 2, wherein a longitudinal axis of the distal section is collinear with a longitudinal axis of the straight shaft section.

41. (Previously Presented) The device of claim 2, wherein at least a portion of a longitudinal axis of the distal section is not collinear with a longitudinal axis of the straight shaft section.

42. (Previously Presented) The device of claim 41, wherein at least a portion of the longitudinal axis of the distal section lies at an angle between 30 and 90 degrees relative to at least a portion of the longitudinal axis of the straight shaft section.

43. (Previously Presented) The device of claim 41, wherein at least a portion of the longitudinal axis of the distal section lies at an angle of approximately 45 degrees relative to the longitudinal axis of the straight shaft section.

44. (Previously Presented) The device of claim 21, wherein at least some of the orifices are oriented in a direction generally lateral to the central axis of the end effector.

45. (Currently Amended) A needle-free jet injection device for delivering a fluid into selected internal tissue, the device comprising:

a body;

a longitudinally rigid elongate member extending away from the body to a blunt distal end, the longitudinally rigid elongate member comprising:

a sidewall,

a central longitudinal axis configured into a shape, wherein the longitudinally rigid elongate member is sufficiently rigid to maintain the shape of its central longitudinal axis during use,

at least one injection orifice disposed on the sidewall, wherein the at least one injection orifice is oriented generally laterally to the central longitudinal axis,

a fluid channel extending substantially all the way from the body to the at least one injection orifice, wherein ~~the fluid channel has a cross section through which the central longitudinal axis extends~~ is within the fluid in the fluid channel,

a straight shaft section, and

a distal section, wherein at least a portion of a longitudinal axis of the distal section is not collinear with a longitudinal axis of the straight shaft section, at least one injection orifice is disposed on the distal section, and the longitudinally rigid elongate member is adapted to be positioned with the at least one injection orifice adjacent the selected internal tissue;

a fluid reservoir in fluid communication with the fluid channel; and

an ejection mechanism disposed within the body, wherein the ejection mechanism is adapted to eject the fluid from the fluid reservoir through the fluid channel and out of the at least one injection orifice with sufficient pressure to penetrate the selected internal tissue while preserving functionality of the tissue and without penetration of the selected internal tissue by the longitudinally rigid elongate member.